

BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: September 15, 2021

LOCATION OF CONFERENCE: Virtual meeting held via Zoom

ATTENDED BY:

NHDOT

Andrew O'Sullivan
Matt Urban
Rebecca Martin
Arin Mills
Ron Crickard
Mike Dugas
Wendy Johnson
Shelly Winters
Emily Polychronopolous
Sam Newsom
Chris Carucci
Kerry Ryan
Tim Boodey
Joseph Jorgens

ACOE

Absent

EPA

Jeanie Brochi

NHDES

Lori Sommer
Karl Benedict

NHB

Jessica Bouchard

NH Fish & Game

Carol Henderson

Federal Highway

Jaimie Sikora

The Nature Conservancy

Pete Steckler

Consultants/ Public Participants

Christine Perron
Julia Sterns
Kien Ho
Tyler DeRuiter
Jay Doyle
John Bruneau
Jen Riordan
Meg Gordon

PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH: *(minutes on subsequent pages)*

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NOTES ON CONFERENCE:**Finalize Meeting Minutes**

Finalized and approved the August 18, 2021 meeting minutes.

Hampton-Portsmouth, 26485 (X-A003(355)).

Christine Perron introduced the project, which involves improvements to a rail trail and is funded under the Federal CMAQ (Congestion Mitigation & Air Quality Improvement) Program. The project consists of approximately 9.8 miles of the Hampton Branch Rail Corridor, recently purchased by NHDOT from Pan Am Railways, beginning at the southern terminus about 1,000 feet north of Drakeside Road in Hampton and continuing north-northeast to the northern terminus at Barberry Lane in Portsmouth. The purpose of today's meeting is to provide a general overview of proposed improvements and existing resources and to start getting preliminary input from the resource agencies on permitting requirements. The project is being designed by Greenman-Pedersen Inc (GPI) and McFarland Johnson Inc (MJ) is completing the environmental review.

The purpose of the project is to improve the condition of the trail to accommodate bicycles and pedestrians. This segment of the rail corridor was purchased by NHDOT for the purpose of create a recreational trail. The intent is for the trail to become part of the NH Seacoast Greenway, a proposed 17-mile trail connecting NH's eight coastal communities. This greenway would then become part of the East Coast Greenway, a 2900-mile effort to connect Calais, Maine to Key West, Florida via a multimodal trail. Improvements to the 9.8-mile corridor that will be addressed under this project are needed because the existing condition of the trail is not conducive to recreational use and parts of the trail have drainage and flooding concerns that need to be addressed. Design of the improvements is just getting underway. A public informational meeting will likely be held this fall.

Tim Whitney provided an overview of the anticipated improvements that will be needed. These improvements are expected to entail the following: removal of any remaining rail ties, resurfacing of the trail, clearing vegetation, drainage upgrades and improvements, including closed drainage system replacement work in Hampton, surface drainage regrading, roadway crossing modifications, trail reconstruction in some locations, bridge rehabilitation, and cross culvert replacements. Additional details were reviewed for the Hampton segment of the trail. This segment has drainage and flooding concerns where an approximately 0.5-mile existing closed drainage system under the railroad bed sees significant flooding during even moderate rain events. The existing system has an 18-inch clay pipe trunkline and improvised manholes and catch basins.

The closed system stretches from the Hannaford detention basin in Hampton and flows southerly to the south of Depot Square in Hampton where it then outlets into existing wetlands to the west. North of the closed drainage are existing ditches that flow south and enter the closed system. Much of the surface drainage from Route 1 and the neighborhoods and businesses between Route 1 and the rail trail outlet to the existing railroad corridor and eventually enter the closed system. For instance, the detention basin that handles all stormwater from the Hannaford store parking lot and roof outlets directly into the closed system under the rail trail. It has been determined that the existing 18-inch pipe is vastly undersized. The proposed concept is to use drainage swales from the Hannaford detention basin southerly to Exeter Road. There the water will enter a new and properly

sized closed drainage system and outlet at the same location and elevation that it does today. A detention basin may be necessary at the outlet to slow the water as it exits the system. An underground chamber system is also being investigated. This area of the corridor has a narrow right-of-way that may be a concern if a detention basin is needed.

C. Perron provided an overview of resources along the corridor. A wetland delineation has been completed in some locations to date, with the intent to delineate only in locations where there is potential for impacts rather than completing the delineation along the entire 9.8-mile corridor. National Wetland Inventory and Priority Resource Area mapping was reviewed to provide a sense of the extent of wetlands that are present. Priority Resource Areas will be field confirmed if located within areas to be delineated. All mapped wetlands along the corridor in Portsmouth are Prime Wetlands with 100-foot buffers. Impacts in Prime Wetlands will require additional coordination and appropriate mitigation.

The project team is still in the process of identifying locations where there is potential for wetland impacts and will be reviewing those locations at a future meeting. It is anticipated that impacts will or could occur where there are drainage upgrades, such as in Hampton, where cross culverts will be replaced, and where the trail surface will be elevated slightly to improve drainage. In general, wetland impacts are not expected along the entire length of the trail.

Three cross culverts will need to be replaced. One culvert is located in Greenland approximately 800 feet south of Breakfast Hill Road. Based on mapped streams, this crossing is located on Berry Brook. However, the delineation did not identify a defined stream channel at the culvert and the culvert is located within an extensive wetland system. Based on watershed size, this is a Tier 2 stream crossing, but input from NHDES is needed to determine if the replacement culvert needs to be designed and permitted as a stream crossing.

The second culvert is in Portsmouth about 0.6 miles north of Banfield Road. This culvert is also located within an extensive wetland system with no defined stream channel. Based on mapped streams, Pickering Brook is shown to cross the rail corridor approximately 200 feet south of the culvert. The mapped location was reviewed during the delineation and no crossing structure was found and there was no evidence of flow from one side of the trail to the other. Again, input from NHDES is needed to determine if the replacement culvert needs to be designed and permitted as a stream crossing. Due to the lack of a defined stream channel at these two culverts, it was not possible to measure bankfull width or other channel characteristics on which to base a crossing design. The Portsmouth culvert also has beaver activity, with evidence of some amateur maintenance work at the culvert to alleviate flooding.

The third culvert is located Portsmouth under Barberry Lane and carries runoff from existing ditches. This site will be field reviewed to confirm the lack of jurisdictional resources.

The NH Natural Heritage Bureau database review resulted in many records of threatened and endangered plant species and exemplary natural communities along the corridor. The locations of these resources will be tracked to determine if there is any potential for impacts. Once that is determined, there will be additional coordination with the Natural Heritage Bureau to discuss potential concerns and the need for surveys.

The entire project is located within the NH Coastal Zone. There will be coordination with the NH Coastal Program to determine the need to prepare a Coastal Zone Management Act consistency review.

The potential to split the corridor into two separate projects was reviewed. When the design team realized that the Hampton drainage issues could slow progress of the overall project, it was suggested that the corridor be split into two separate projects. In coordinating with FHWA, it was agreed that separate projects would have independent utility as long as the corridor was split in a way that allowed access to each segment of the trail. A logical split would be located at a DOT owned property in Hampton that provides good trail access and has been suggested as a potential future trailhead. Splitting the corridor here would create one project for the southern segment, which would be 1.5 miles, and a second project for the northern segment, which would be 8.1 miles. The project overall has a lot of public support and has generated a lot of enthusiasm, and splitting the projects would allow a portion of the trail to be completed as scheduled to maintain that public support. One reason for meeting today is to get input on any potential concerns with splitting the project, which would result in two NEPA documents and more than likely two permitting efforts. If there are two separate permitting efforts, cumulative impacts for the two projects combined could be considered for mitigation purposes.

Karl Benedict provided the following comments:

- Priority Resource Areas should be confirmed in the field, especially those identified as peatlands.
- For floodplain wetlands adjacent to Tier 3 crossings, net flood storage should be considered.
- Be sure to consider buffer impacts at prime wetlands.
- The two wetland culverts should be considered stream crossings and would be permitted as alternative designs; Existing conditions and constraints should be summarized in the alternative design technical report.
- Outfall locations for closed drainage system should seek to avoid wetland impacts.
- The project will require compliance with Alteration of Terrain requirements.
- Invasive plant management should be taken into consideration.
- No concerns with splitting into two projects as long as cumulative impacts are considered for mitigation purposes.
- Changes in water surface elevation should be reviewed with the Natural Heritage Bureau since some of the species and communities may be sensitive to changes in water level.

Lori Sommer had the following comments and questions:

- Agree with Karl's comments.
- Review potential impact locations for vernal pools.
- It would be interesting to have game cameras set up at the stream crossings.
- No concerns with splitting into two projects, especially since it sounds likely that both projects would require mitigation, but you should get input from the Corps (not present at today's meeting).
- The proposed impacts may require a DES public hearing.

- Does NHDOT own the right-of-way and are there additional side trails off the main corridor? C. Perron responded that the NHDOT does own the right-of-way and that she is not aware of any existing or proposed side trails.

Carol Henderson provided the following comments:

- No concerns with splitting into two projects.
- Surprised to see that no wildlife species were listed in the NHB review memo. The memo has expired, so perhaps wildlife species will be added when the memo is updated.
- Curbing is not recommended due to its impact to amphibian and reptile connectivity.
- She will ask the NHFG Marine Division for input on Berry Brook.

Jean Brochi commented:

- Agree with comments made by others.
- Section 106 will need to be addressed. C. Perron responded that the entire corridor is considered eligible for the National Register of Historic Places and there will be Section 106 consultation as proposed work is progressed.
- Has concerns with splitting into two projects but understand if there is a need. If the decision is made to split the corridor into separate projects, the need for this should be documented and cumulative impacts will need to be addressed.

Jamie Sikora noted that splitting the corridor into two projects will require documenting that each segment has independent utility.

Jessica Bouchard commented:

- All of the species known to occur in the vicinity of the project are wetland species.
- Reach out once potential impact locations are identified in order to discuss the need for surveys. Surveys will likely be necessary in areas of wetland impacts.
- Concur with Karl's comment regarding consideration of water surface elevation, especially within Great Bog in Portsmouth.

Pete Steckler commented:

- Be mindful of wildlife connectivity and consult Connect the Coast resources.
- No concerns with splitting into two projects.
- Consider the need for a crosswalk on Route 1 near the proposed split.

Claremont, Washington Street Traffic Signal Project, #CMAQ 41748 (X-A004(736))

BETA provided a presentation of the Claremont, NH – Washington Street Traffic Signal Optimization project and its related impacts to Natural Resources.

Project Purpose and Need: Upgrading the equipment and installing communications to improve traffic flow and reduce delays for the ±2-mile corridor.

Background: CMAQ funded project where BETA is completing the design.

Project Locations: 10 Signalized Intersections from Water Street to Home Depot.

NHDOT has upgraded the Walmart signal last year

Scope: Improve the technology of the equipment. Noted that the Walmart intersection was a complete upgrade, whereas this project will be less invasive.

Repeaters Discussion: Noted that we may need to install new poles. Goal is to mount them on existing poles.

Environmental: Previous submissions with NHB noted no disturbance. Do we need to resubmit if there may be disturbance related to foundations?

Floodplains: Zone AE could be affected by intersections 6-10.

Wetlands: Delineation has not been conducted, but review of NH GIS shows the Sugar River flows between Intersections 1-2 and comes close to Intersection 4. Noted Perennial Stream between Intersection 3-4-5. Open water body approx. 10' from the road near Intersection 5.

Recreation Trail – Sugar River Public Trail is adjacent to the road. Don't expect any impacts to the recreational area.

If we're adding site locations by installing new poles, does this change the Project and require re-review by National Heritage.

QUESTIONS AND COMMENTS

Karl Benedict – NH DES

If there are new pole locations, the wetland delineation may be necessary to determine areas that should be avoided. Preferred that the impacts are outside of the areas.

If it's determined that there are wetlands and a pole is necessary, perform Wetland Permitting.

As of now, it doesn't seem likely that we would impact wetlands.

Lori – NH DES

No additional comments beyond noted by Karl.

If there are wetland or floodplain impacts associated with Tier 3 areas, come back to Resource Agencies to discuss.

Carol – NH Fish and Game

If there are wetland impacts, should be revisited and require a new NHB. The Department itself doesn't have its own permit. So, would not require something unless wetland impacted. Could solicit if interested in responses.

Jean – EPA

No additional comments.

Jamie – FHWA

No response.

Jessica – NHB
No Response.

Pete – TNC
No comments.

Ron Crickard – NHDOT Bureau of Environment.
Because we're changing the scope, we should update the documents, touch base with Jillian Edelman of Cultural Resources with new areas, wetlands and floodplain impacts will need to be addressed in NEPA documents and permitted as required.

Dover Drainage Repair 40042 (Non-federal)

Arin Mills and Emily Polychronopoulos from NHDOT presented the Dover drainage repair project, a state funded project under the Bureau of Turnpikes. Arin said the statewide project also includes drainage repairs in Merrimack which have no wetlands impacts. The work includes repairs to existing drainage locations and installation of stone lined outlet basins. A map was shown with the National Wetlands Inventory data to show drainage from these pipes leads in to the large wetland complex which further flows into Indian Brook and eventually to the Cochecho River. Original 1979 construction plans were shown, with potential for additional work to the pipes possibly done in 1980's. Photos were shown of the existing conditions pipe inlet/outlet for both #73021 and 73-xxx.

Emily described the project as repairs to existing pipes to address back-up of water on the ramp roadway from a clogged pipe, resulting in safety concerns. Pipe #73021 is clogged, and the project will remove debris and install an intermediate manhole midway to allow for future cleaning and maintenance from outside the wetland. Pipe #73-xxx was located and identified during the field investigation, and the outlet is submerged. Pipe #73021 is approx. 860' long and collects water from the Turnpike closed drainage system. Once debris is removed both pipes will be evaluated for the slip lining and repair as needed. Both pipes propose a stone lined outlet basin with headwalls, while construction of a single access road will allow both pipes to be accessed and maintained.

Wetland impact plans were shown for installation of the outlet basins and access to conduct the work. Permanent wetlands impacts for pipe #73021 are anticipated for basin construction and installation of a portion of the access road that will be used for future maintenance of the structure. Permanent impacts for basin 73-xxx are for basin construction and temporary impacts for access. The existing drainage pipes will remain as they are deep beneath the roadway bed. The outlet basin will allow for sediment to collect and regular maintenance and cleaning can be conducted. Emily provided a basic overview of the construction sequence to include installation of erosion control measures, access road construction, dewater outlet, clean out pipe and construct outlet basin. Once the pipe is constructed it will be determined if the pipe is compromised and if a slip-line is necessary. Once work is complete the disturbed areas will be spread with humus and reseeded, and erosion control measures will be removed once established.

Arin provided an overview of the environmental resources to include no Designated river or FEMA floodplain, no previous permits identified, no conservation lands adjacent and no contamination identified via OneStop or field review. NHB21-1489 determined although species

identified no impacts are anticipated. Arin mentioned another review was recently conducted due to the change in project type classification, and results are pending. Northern long-eared bat was determined consistent with the 4(d) rule, and cultural review is underway. The GIS data determined a potential for peatlands/bog, a potential Priority Resource Area (PRA), and a field review determined the impact areas do not have soils and/or vegetation consistent with a bog and therefore is not considered a PRA. Invasive species, mainly Phragmites, will utilize the DOT invasive species BMP's to control this Type II invasive species.

Karl B. asked if there is potential for relocation of the outlets and Emily stated relocation was not considered due to the depth of the pipe below the roadway and the existing nearly flat slope of the pipe. Karl further asked how the proposed outlet basin would be maintained, once constructed, and at what interval. Emily said maintenance staff would likely check the outlet yearly to assess for needed maintenance. The access road would be constructed and maintained to allow for future maintenance and cleaning of the structure, and equipment could conduct necessary cleaning without requiring equipment in the wetland. Karl further asked restoration and maintenance with regards to invasive species would be managed and asked ensure temporary and permanent impacts be reviewed. Karl further asked for details on access in wetland area as well as restoration of muck containing invasive species; to which it was clarified removal of muck will only occur in the outlet basin permanent impacts. Lastly Karl asked for verification of the resources identified and potential for USGS stream. Arin confirmed no USGS stream is identified in this area.

Lorie S said so long as impacts remain under 10,000 sf so no mitigation is required. Carol H noted the NHB results determined no impacts noted. Genie, Jessica and Pete had no comments.

Bedford #43138 (X-A005(049))

Chris Carucci, NHDOT Highway Design, gave an overview of the proposed federally funded culvert rehabilitation project. The proposed AD date is March 8, 2022, with construction anticipated in the summer of 2022.

The culvert carries Bowman Brook under NH Route 114, approximately 475' north of New Boston Road, and is a Tier 3 crossing. The existing culvert is a 72" diameter x 119' long corrugated metal pipe constructed in 1965. Slope is about 0.8% and both ends have mortared stone headwalls. Embankment fill height is about 21'. The culvert is in poor condition with heavy rust and perforations along the invert. Sections of missing invert near the inlet are causing sinkholes behind the inlet headwall. The inlet and outlet headwalls need minor repairs. There was no perch at the inlet or outlet of the 72" cmp.

The inlet area is a large ponded wetland with significant storage. There is also a ponded area at the outlet, about 30' wide at the widest point and about 75' long. Depth near the culvert outlet is about 3'. At 75' downstream, there is a constriction and the channel changes. The outlet pool and constriction are shown on the original construction plans. The next two structures downstream are an 8' wide stone and concrete box culvert and then a 72" concrete pipe under New Boston Rd.

NHDOT District 5 Maintenance reports no history of flooding related to the 72" cmp culvert. Bowman Brook was reviewed by NHDOT Bureau of Environment on 6/4/2021. Bankfull widths were measured at 4 points downstream of the 72" cmp, with an average bankfull width of 18'. A full stream assessment was completed by Normandeau Associates in the same area in 2013 for

another downstream culvert rehabilitation (Bedford 16156), finding the stream to be a Rosgen Type E. A bankfull width of 18' and 2.0 entrenchment ratio was used to set the compliant span of 36'.

The environmental review identified the potential presence of endangered, threatened, or rare species, invasive species, and limited re-use soils (LRS), and potential coordination for Section 106, water quality requirements, Alteration of Terrain (AOT) requirements, and essential fish habitat (EFH). Bowman Brook has a mapped FEMA floodplain (Zone AE) with floodway. Protected shoreland buffer, prime wetlands, designated rivers, and conservation lands were not identified.

Existing hydrology and hydraulics were outlined in conjunction with the culvert, stream, and road profiles. Streamstats reports drainage area at 3.16 sq mi (2,022 acres). Review of LIDAR contours found a reduction in contributing area in the lower watershed, making the total area used for analysis 1,985.5 acres, or about 3.1 Sq miles. The SCS Method (Hydrocadd) was used for analysis, using the Cornell 24 hr rainfall predictions. The initial Hydrocadd model was from the drainage report for the Market Basket Development, completed by TF Moran in 2011. The model was modified to reflect the small reduction in drainage area previously noted, updated storage based on LIDAR, and re-calibrated to match the FEMA Q100 regulatory elevation of 249.7. The model indicated that the existing 72" culvert can pass the 100 year storm without bypass.

Several rehabilitation alternatives were considered, as well as replacement with a hydraulically sized structure, and replacement with a rules compliant structure. A fully compliant crossing would be a 36' span bridge, cost estimated at just over \$3.6 million, with significant permanent and temporary impacts including loss of existing flood storage. Replacement with a hydraulically sized culvert was estimated at \$2 million, with impacts similar to the bridge option. Hydraulic performance of several rehabilitation alternatives was compared. A cured in place liner was identified as the preferred alternative, with a current cost estimate of \$376,640.

The proposed design will slipline the entire length of the existing 72" x 119' long culvert, make minor repairs to the stone inlet and outlet headwalls, and fill any sinkholes. The liner wall thickness is typically less than one inch, and the cured liner will retain some corrugated texture. The proposed rehabilitation will not have a significant effect on capacity or velocity. There will be no effect on FEMA floodplain elevations or downstream structures. There will be no significant effect on the frequency of flooding, or sediment transport. There will be no permanent effect to the floodplain wetlands adjacent to Bowman Brook. All work will be within the existing ROW.

Temporary access roads will be required for access to the culvert inlet and outlet. Some clearing will be required, but no grubbing / stump removal is anticipated. Clearing will be minimized to the maximum extent practicable. Jurisdictional areas will be restored to existing conditions. Stream flow can be allowed to flow through or be pumped through the existing pipe for most of the project duration and during storm events. The Contractor's water diversion plan will need to allow for the pipe to be dry for a few days during insertion and curing of the liner. Total project duration is expected to be 2 to 3 months, with the majority of the time being for mobilization, access roads, erosion controls, water diversion, and restoration.

The project will be under the 1 acre threshold for earth disturbance for CGP coverage. Total disturbed area is estimated at 22,275 SF (0.51 acres), with no disturbance to existing paved areas. No permanent Impacts are proposed. Limits of temporary impacts will be about 30' upstream and 40' downstream of the existing culvert ends. Total Temporary Impacts will be about 3,194 SF, including 40 LF of channel and 96 LF of banks at the outlet for a total of 136 LF.

Concurrence was requested for project consistency under 904.09 Repair of Existing Legal Tier 3 Crossings and that there is no required mitigation.

Karl Benedict, NHDES Wetlands Bureau, noted that the proposed work appears to meet the requirements of 904.09 and that PE certification would be required and that details on restoration of temporary impacts would be required to ensure that the impacts are temporary. He also noted that a water diversion plan meeting the 2-year storm requirement may be difficult to achieve. He also requested that the proposed water surface elevation and liner inverts be shown on the wetland plans to show that the proposed liner would not cause a perch. C. Carucci replied that the proposed liner thickness would be between 5/8" to 3/4" and would not be large enough to be considered a perch. Karl also noted that an invasive species management plan would be required and that he wanted to confirm that no time of year restrictions on work in the brook would be required. C. Henderson confirmed that there were no fish species of concern that would require such restrictions.

Lorie Sommer, NHDES Wetlands Bureau noted that SADES lists this culvert as 'reduced passage', but it is not clear why. She did not have concerns with the small increase of cured material and would not suggest that mitigation be required.

Carol Henderson, NHFG noted that eastern brook trout were reported to be present, but that coordination with John Magee (NHFG) indicated that they were not considered wild eastern brook trout. She also appreciated the explanation of various slip lining methods and that the proposed cured in place liner would retain some corrugated texture.

Jeanie Brochi from Environmental Protection Agency (EPA) had no comments.

A response was not received from Jamie Sikoria (FHWA)

Jessica Bouchard (NHB) noted that the NHB check from 12/10/2020 indicated that there were records in the area but no impacts are expected for the proposed work.

Pete Steckler, The Nature conservancy (TNC), asked if the project could include access for terrestrial wildlife from the edges of the ponded areas at the inlet and outlet to the culvert. He noted that there is good quality habitat upstream and that such an improvement may be self-mitigating. C. Carucci noted that there is a 24" pipe crossing just north of the culvert that could provide terrestrial passage and that installing a wildlife shelf inside the 72" culvert was not practical due to the reduction in hydraulic capacity. P. Steckler clarified that he meant placing stepping stones along the edge of the headwalls. C. Carucci noted that placing Class B size (2' diameter) stone along the headwalls could be within the project scope and budget, but NHDOT would not want to cause unnecessary impacts or trigger mitigation. Karl Benedict felt that the concept would be a benefit and that stream impacts would be self-mitigating. He was concerned that upstream impacts to the

(PRA) floodplain wetlands adjacent to a Tier 3 stream would require mitigation. Lori Summer also agreed that the concept would be beneficial, but it was unclear as to whether mitigation would be required. C. Henderson noted that stone along the wings as discussed could be a problem for future maintenance related to removing debris at the inlet.

Nashua-Manchester, #40818 (Capital Corridor Rail)

Jenn Riordan (GM2) introduced the project and the team members. The project involves the extension of MBTA commuter rail services from Lowell, MA to Manchester, NH. The project corridor is approximately 30 miles long and crosses through Lowell, Chelmsford, and Tyngsborough, MA, and Nashua, Merrimack, Bedford, and Manchester, NH. It includes 9 miles in Massachusetts and 21 miles in New Hampshire. The route follows an existing rail line that currently handles only freight. The project was formerly referred to as the Capitol Corridor Rail Project. A Federal Railroad Administration (FRA) service-level NEPA Environmental Assessment was completed in 2014, which evaluated various transit alternatives between Boston, MA and Concord, NH. The current project involves extending MBTA commuter rail service from Lowell to Manchester. Tasks include preliminary design engineering, completion of a Federal Transit Administration (FTA) NEPA Environmental Assessment, and development of a financial plan. NHDOT is the project proponent. The existing rail line and right-of-way (ROW) in MA is owned by MassDOT/MBTA and in NH is owned by Pan Am Railways. The purpose of the project is to provide mobility options and reduce congestion and emissions.

Project preliminary design is ongoing and impacts have not been determined yet. Potential improvements include track and signal upgrades, bridge and culvert work, grade crossing improvements, and ROW vegetation clearing. The rail line within the project limits was historically double-tracked. Improvements would include adding the second track back in for certain segments of the corridor. These areas are still being identified. At this point no bridges will be replaced but some may need repair. No culvert replacements have been identified but this is still being evaluated. Vegetation clearing will likely be necessary within the rail ROW. Based on field reviews, it appears that most of the clearing would be shrubs and lower-growing vegetation. Larger trees are generally located beyond the existing ROW.

Four stations and one layover facility are proposed in NH. It was noted that the specific layout at each location is still being defined and some are subject to change. The sites include:

- South Nashua Station – Two options are being considered, one adjacent to Pheasant Lane Mall and another at a redevelopment site near Spit Brook Road (former Hampshire Chemical site). The Pheasant Lane Mall site has no wetlands within the proposed limits of disturbance and is located outside of the 100-year floodplain. It is partially within the Protected Shoreland zone of the Merrimack River. The Spit Brook Road site does not have any wetlands and is located outside of the 100-year floodplain. It is located partially within the Protected Shoreland of the Merrimack River.
- Nashua Station – Located south of Crown Street. There are no significant natural resource issues. The area is currently developed and the Merrimack River is located over 800 feet away.

- Bedford/Manchester Airport Station – Located on the west side of the Merrimack River at Raymond Wieczorek Drive. Sebbs Brook and associated wetlands are located to the south and are within a 100-year floodplain. Additional wetlands have been identified north of the station near Somerville Drive. The Merrimack River is located to the east but the station is not within the Protected Shoreland zone.
- Manchester Station – Located between Granite Street and Valley Street. The area is currently developed, located outside the 100-year floodplain, and the Merrimack River is over 400 feet away.
- Manchester Layover – Two options are being considered, one located north of Hancock Street/Queen City Avenue in a portion of the abandoned Pan Am rail yard and a second option in the wooded back area of the City of Manchester's Pine Grove Cemetery. The site located north of Hancock Street is mostly developed but there are two low quality wetlands east of the tracks. This site is not located within a 100-year floodplain and the Merrimack River is approximately 250 feet west of the site at the closest point. The Pine Grove Cemetery site would be located on the east side of the tracks beyond the 100-year floodplain and outside of the Protected Shoreland zone. There are two known bald eagle nests located on Carthagina Island and there is a semi-rich oak-sugar maple exemplary natural community forest located on the west side of the tracks but not within the layover limits of disturbance. The layover would be located within the Pine Grove Cemetery Backland Conservation Land. Wetlands are located nearby but impacts have not been evaluated yet.

Natural resources within the project corridor were summarized. Wetlands were field delineated in April, May, and June of 2021. All of the corridor in Massachusetts was field delineated and about 8 miles of the NH portion was field delineated (corresponds to where improvements such as double track, proposed stations, or bridge/culvert work may occur). There are four Prime Wetlands located in Nashua. There are several Priority Resource Areas as well as many small, low functioning wetlands adjacent to the rail bed. No vernal pools were observed. There are eight named surface waters that are crossed by or located adjacent to the project, as well as at least six unnamed small perennial and intermittent stream crossings. Stream crossing assessments have not yet been completed since potential culvert replacements are still being identified. Assessments will be completed if any culvert replacements are proposed.

The project is subject to AoT requirements. New impervious surface would be located at the stations, primarily associated with any new proposed station access roads and parking. and water quality treatment would be included. The project is entirely within the MS4 permit area. Most of the surface waters near the project have impairments or TMDLs. There are no Outstanding Resource Water watersheds or Class A waters near the project.

For groundwater resources, the majority of the rail corridor is mapped as a GA2 groundwater classification area. The rail corridor in Merrimack, Bedford, and Manchester is located within a Source Water Protection Area. In Merrimack there is a water supply intake protection area and wellhead protection area. There are also various wells mapped along the corridor and near the station and layover sites.

Various plant and animal species were listed in the NHB report. Field surveys for the plant species were conducted concurrently with the wetland delineation and follow-up rare plant searches were conducted in June and August. Wild lupine was found in one location adjacent to the rail ROW in Bedford. Semi-rich oak-sugar maple forest exemplary natural community is located adjacent to the rail line near Pine Grove Cemetery (near one of the site options for the Manchester layover facility). Both appear to be located beyond the anticipated impact limits of the project, but their locations have been noted and potential impacts will be reviewed as the design progresses.

Wright's spikesedge has been recorded near the Merrimack River railroad bridge. It was not found during the wetland delineation site visit. A follow-up visit later in the growing season was attempted in August but the water levels in the river were so high that the survey could not be completed. If any work within the river is proposed, an additional survey could be completed during final design (will be included as a condition in the NEPA document).

Small whorled pogonia was listed in the first USFWS IPaC report received for the project but was not listed in a later report. GM2 searched for it during the field reviews and did not find the plant within the rail ROW.

Some coordination has already been completed with NH Fish and Game regarding the listed animal species. For brook floater, a mussel survey near the Merrimack River bridge was not included in the current phase of the project. If impacts to the river are proposed, a survey would be completed during a later phase of the project. For bald eagle, a nest was observed on Carthagina Island in Manchester. This is located approximately 500 feet from the rail ROW. For the grassland bird species, GM2 coordinated with NH Fish and Game and NH Audubon. The NHB records are in the fields near Anheuser-Busch in Merrimack. No impacts to these fields are anticipated but if work would occur in this area, then a grassland bird survey would be completed under a later phase of the project.

For northern long-eared bat, acoustic surveys are not included in the current phase of the project but would be completed under a later phase if necessary. No known maternity roost trees or hibernacula are nearby.

Other natural resources include Essential Fish Habitat for Atlantic salmon (Merrimack River, Nashua River, Pennichuck Brook, and Souhegan River). The Lower Merrimack, Souhegan, and Piscataquog Rivers are NH Designated Rivers. Large sections of the project are located adjacent to 100-year floodplains. The rail line is generally elevated above the Merrimack River and outside of floodplain. The rail line crosses floodplains at the larger perennial streams and a few other locations. Several of the waterbodies within the project limits have Protected Shoreland. Invasive plant species are present throughout the rail ROW.

Resources within the Massachusetts portion of the project were summarized. Wetlands were delineated along the entire 9-mile corridor in MA. Sections of the corridor cross through the 100-foot buffer zones of the wetlands and banks. The rail line runs parallel to the Merrimack River and crosses several perennial streams. MassWildlife Natural Heritage and Endangered Species Program (NHESP) identified two listed species: bald eagle and riverine clubtail dragonfly. A meeting was

held with MassWildlife to discuss potential impacts. Recommendations included minimizing vegetation clearing, especially along river banks, and having time-of-year restrictions.

The next steps for the project include attending a second Natural Resource Agency Coordination meeting once impacts have been identified. The NEPA document is scheduled for completion in late December 2021. Permit applications would be submitted at a later point under a separate phase of the project.

Comments were then provided by the following resource agencies.

Karl Benedict (NHDES)

- The project needs to meet the stream crossing rules (Env 900) and AoT requirements.
- There may need to be some hazardous waste management at the Spit Brook Road station site.
- Recommended focusing on the functional assessments in evaluating wetland impacts.
- Need to consider the Priority Resource Area (PRA) impacts as well as the 100-year floodplain and prime wetlands
- Recommended coordinating with the Local Advisory Committees (LACs) and Conservation Commissions. Jenn responded that the LACs and Conservation Commissions in NH were recently contacted.

Lori Sommer (NHDES)

- Agreed with Karl's comments
- Asked about the protocol for the stations regarding size. Shelly Winters clarified that the station sites would not involve a large amount of construction. No large buildings are proposed, just platforms and parking areas. Regarding the layover sites, Lori stated that the Pine Grove Cemetery location is not appealing due to heritage, landscape, and proximity to the Merrimack River.
- Asked if there was any current use on the second track. Jonathan Bruneau from Jacobs responded that the second track is currently used by Pan Am as a maintenance access road.
- PRA and prime wetland impacts will need to be looked at closely.
- Asked if the clearing of vegetation would be a one-time occurrence or if it would be maintained. Secondary impacts associated with the clearing/conversion of wetlands would be considered by the ACOE.

Carol Henderson (NH Fish and Game)

- Recommended staying in contact with the NH Fish and Game Nongame Program as the project moves forward. Suggested coordination and communication when there is more information on the disturbances.
- Nesting birds can be disturbed during construction even when their habitat is not being directly impacted (mentioned bald eagle and peregrine falcon in the city station sites)
- Asked if there is a tentative construction date. Shelley Winters responded that the financial plan is next and then it is up to the legislators to decide if the project moves forward.

Jaime Sikora (Federal Highway Administration)

- No comments due to FHWA not funding the project

Jessica Bouchard (NH Natural Heritage Bureau)

- Asked GM2 to send a record of previous communication between GM2 and NHB.
- Asked if GM2 was aware of the two new species listed in the 2021 NHB report and whether GM2 surveyed for them. Jenn Riordan confirmed that these species were included in the field surveys.
- Suggested doing an additional survey for Wright's spikesedge once Merrimack River shoreline impacts have been determined.
- Seconded Lori's comment about not preferring the Pine Grove Cemetery location for a layover site due to potential indirect impacts to the exemplary natural community.

Pete Steckler (The Nature Conservancy)

- Agreed with Carol about consulting with the NH Fish and Game Nongame Program. Noted that wildlife corridor and connectivity maps are being produced that could be useful to the project.

This project has not been previously discussed at the Monthly Natural Resource Agency Coordination Meetings.

Madbury, #43276, (X-0005(068))

Chris Carucci, NHDOT Highway Design, gave an overview of the proposed federally funded culvert rehabilitation project. The culvert carries Beards Creek under Madbury Road, approximately 0.5 miles north of US Route 4, and is a Tier 2 crossing. The existing culvert is a 58" wide x 36" high x 131' long corrugated metal arch pipe constructed in 1980. The pipe is in poor condition with heavy rust, some perforations, and damage to the inlet end. There was no perch at the culvert inlet or outlet.

A Town owned crossing, located approximately 175' upstream on Sarah Paul Road, was also described.

NHDOT District 6 Maintenance reports no history of flooding related to the State culvert. Discussion with the Town Road Agent indicated no recent history of flooding of the Town Road, except for one time when the State culvert was blocked by beavers. A stream assessment was completed by NHDOT on 5/27/2021, finding the stream to be a Rosgen Type E immediately upstream of the crossing. Immediately downstream, the channel is not natural, as it was constructed as part of the roadway embankment. The reference reach was farther upstream of the inlet and was classified as Type F. Bankfull widths averaged 4.6' at the crossing and 5.6' for the reference reach. The reference reach data and entrenchment ratio range of 1.0 to 1.4 was used to determine the compliant span range of 5.6' to 7.8'. An 8' span was used to evaluate the compliant design option. The environmental review identified the potential presence of rare species, invasive species, and limited re-use soils (LRS), and potential coordination for Section 106, water quality requirements, Alteration of Terrain (AOT) requirements, and essential fish habitat (EFH). Floodplains, protected shoreland buffer, prime wetlands, designated rivers, and conservation lands were not identified.

Existing hydrology and hydraulics were outlined in conjunction with the culvert, stream, and road profiles. Streamstats reports drainage area at 0.42 sq mi (268.5 acres). Review of LIDAR contours found additional contributing area in the upper watershed, making the total area used for analysis 376.3 acres, or about 0.588 Sq miles. Streamstats predicts Q100 at 106 cfs using the revised 376 ac

boundary. The FHWA Regression Equations predict Q100 between 97 and 137 cfs. The SCS Method (Hydrocadd) was used for preliminary analysis, with Q100 predicted at 200 cfs. The existing culvert can pass the 100 year storm without overtopping Madbury Road. The Town crossing would be overtopped using the conservative (200 cfs) flow. The State culvert has slight backwater effect on the Town crossing, but it would not be the primary cause of the Town road being overtopped.

Considered alternatives were described including replacement with a compliant span structure and rehabilitation by sliplining. Sliplining options included polymer coated CMP liner, GRP custom size liner, and cured in place liner. Hydraulic performance of the rehabilitation alternatives was compared. The corrugated metal pipe liner was identified as the preferred alternative.

The proposed design will remove a portion of the damaged inlet end, shortening the culvert by about 7', and creating a more hydraulically efficient headwall at the inlet. The area of pipe removed will be replaced with simulated streambed material for the channel bottom and vegetated side slopes.

The remaining 124 LF of culvert will be sliplined with a 49" wide x 33" high polymer coated corrugated metal arch pipe liner. The space between the host pipe and liner will be filled with grout. The liner inverts will be about 2" higher than the existing pipe inverts.

The proposed rehabilitation will not have a significant effect on capacity or velocity. There will be no significant effect on the frequency of flooding, or sediment transport. There will be no permanent effect to the stream channel or adjacent wetlands and there will be no perch when the work is complete. All work will be within the existing ROW.

Access to the culvert will be from the edges of Madbury Rd. Slopes are relatively flat maintained grass, so no special access concerns are expected. Minimal clearing of trees greater than 3" dbh will be required. 300 SF of clearing at the outlet is estimated for the small trees and brush along the outlet channel. No grubbing / removal of stumps is anticipated. The project will be under the 1 acre threshold for earth disturbance for CGP coverage. Total disturbed area is estimated at 19,500 SF (0.44 acres). No disturbance to existing paved areas.

Temporary Impacts will be required for access, water diversion, and erosion controls, with the upstream limit along the existing woods line, to a distance of about 50' left and right of the inlet. The downstream limit is at the ROW line, about 30' from the existing outlet.

Total Temporary Impacts will be about 1,436 SF. Total Temporary LF impacts will be about 189 LF.

Concurrence was requested for project consistency under 904.08 and that there is no required mitigation.

Karl Benedict, NHDES Wetlands Bureau, asked if the upstream structure might be replaced in the future and if so would the replacement be considered in this proposed project, agreed with the preferred alternative, stated an alternative design should be considered, the need to consider terrestrial passage referencing to consider whatever Pete and Carol may have for comments, and asked about the extent of clearing at the outlet. C. Carucci responded that it is not anticipated the upstream structures would be replaced in the near future, clearing will be limited to small trees and brush at the outlet which will be allowed to grow back, and that an alternative design will also be considered. K. Benedict agreed that either 904.08 or an alternative design would not change the proposed impacts.

Lorie Sommer, NHDES Wetlands Bureau stated that if Karl's concerns could be addressed and if it could go alternative design mitigation is not required.

Carol Henderson, NHFG stated it didn't appear there was room in the culvert to address terrestrial passage and more details were needed regarding the species identified on the Natural Heritage Bureau (NHB) report. Kerry Ryan, NHDOT Bureau of Environment, stated coordination with NHFG had begun and will continue once the preferred alternative was agreed upon.

Jeanie Brochi from Environmental Protection Agency (EPA) had no comments.

A response was not received from Jamie Sikoria (FHWA) and Jessica Bouchard (NHB) when asked if they had comments.

Pete Steckler, The Nature conservancy (TNC), asked if the project could be postponed and could the 4' x 8' structure be considered if funding was not an issue in order to see how the new federal funding plays out. C. Carucci replied that the culvert is in poor condition and needs to be fixed as soon as possible to prevent failure.